

BROOKHAVEN NATIONAL LABORATORY Safety & Health Services Division INDUSTRIAL HYGIENE GROUP Standard Operating Procedure: Program Procedure	NUMBER IH72450
	REVISION FINAL Rev0
Subject: Cleaning Masks After Fit Testing	DATE 03/16/04
	PAGE 1 of 8

Contents

- 1.0 Purpose & Scope
- 2.0 Responsibilities
- 3.0 Definitions
- 4.0 Prerequisites
- 5.0 Precautions
- 6.0 Procedure
- 7.0 Implementation & Training
- 8.0 References
- 9.0 Attachments
- 10.0 Documentation



1.0 PURPOSE & SCOPE

Purpose: This procedure describes the approved procedure for cleaning respiratory protection respirators face pieces after fit testing. This SOP is used in conjunction with IH72100 *Respiratory Protection Program*.

Scope: The SOP is limited to the cleaning of the inventory of equipment kept in the fit test room for training and fit test purposes. This SOP does not authorize or describe cleaning of respiratory protective equipment that has been exposed to chemical or radiological contaminants.

2.0 RESPONSIBILITIES

- 2.1 This program is implemented through the SHSD Industrial Hygiene Group Leader and the *Respiratory Protection Program Administrator (RPPA)*. Members of the SHSD Industrial Hygiene Group and other BNL organizations, with qualifications in accordance with Section 7 of this procedure, can clean face pieces used during fit testing.
- 2.2 It is the responsibility of persons using this SOP to comply with all aspects of it.
- 2.3 The IH Group shall maintain the equipment used in this procedure.

BROOKHAVEN NATIONAL LABORATORY Safety & Health Services Division	NUMBER IH72450
	REVISION FINAL Rev0
INDUSTRIAL HYGIENE GROUP Standard Operating Procedure: Program Procedure	DATE 03/16/04
	PAGE 2 of 8
Subject: INSTRUMENT OPERATION RESPIRATORY PROTECTION PROGRAM Cleaning Masks After Fit Testing	

3.0 **DEFINITIONS** none

4.0 **PREREQUISITES** Prior to cleaning equipment, the person must meet the qualification requirements in Section 7.

5.0 **PRECAUTIONS**

5.1 **Hazard Determination:**

- The cleaning of fit test equipment does not cause exposure to any physical or radiological hazards.
- The cleaning disinfectant chemicals do not pose a hazard when used as directed in this SOP. But they are hazardous (CORROSIVE) from eye contact or ingestion of the concentrated liquid.
 - In case of eye contact: Immediately flush for 15 minutes and then get prompt medical attention at OMC. Use the eyewash station to the left of the sink.
 - If swallowed: Go to OMC immediately. (Drinking large quantities of egg whites or gelatin solution is recommended, or large quantities of water.)
- Personal protective equipment, other than latex gloves, is not required.
- The equipment does not generate Hazardous Waste. The wash solutions and rinse can be released to the sink in Building 120, Room 1-19.

5.2 **Prohibitions:**

- Do not use chlorine bleach on facepieces.
- Do not use isopropyl alcohol on the inside sight surfaces.
- Never use abrasives or abrasive pads on the mask parts.
- Do not use a cloth or sponge to dry the inside of the mask.

BROOKHAVEN NATIONAL LABORATORY Safety & Health Services Division		NUMBER IH72450
INDUSTRIAL HYGIENE GROUP Standard Operating Procedure: Program Procedure		REVISION FINAL Rev0
Subject: INSTRUMENT OPERATION RESPIRATORY PROTECTION PROGRAM		DATE 03/16/04
Cleaning Masks After Fit Testing		PAGE 3 of 8

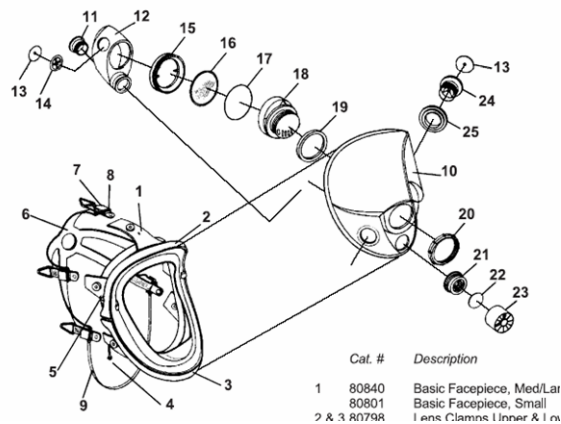
6.0 PROCEDURE

6.1 Equipment:

- Disinfectant Georgia Steel “*Special Respirator Cleaner Plus®*”, or equivalent (benzyl ammonium chloride compound 15%)
- Dispenser bottle
- Wash bucket
- Plastic Storage Bags
- Sink and Potable Warm Water supply
- Neoprene, Nitrile, PVC, or Natural Latex Rubber Gloves



- 6.2 After fit testing masks has been worn by a worker,
- Remove the filters and testing by-pass fittings.
 - Place the used facepiece in a container clearly labeled to prevent the equipment from being used again prior to cleaning.
- 6.3 Move used face pieces from the fit test room (Building 120, Room 1-34) to the cleaning area in Building 120, Room 1-19.
- 6.4 Place ½ capful of the “*Special Respirator Cleaner Plus®*” in the cleaning pail
- 6.5 Fill the pail approximately ¾ full (1 gallon) with warm water from the tap. Mix completely.
- 6.6 Disassemble the facepiece: Remove valves, valve covers, o-rings, nosecup, and speaking diaphragms (parts 11 – 19 and 20 -23 in example below). Do not disassemble the clear facepiece from the facepiece assembly (part 10). Do not disassemble the straps harness (parts 1-8).
- 6.7 Place the pieces and the facepiece assembly into the cleaning solution. (The solution may be used to clean up to 3 masks, then needs to be replaced with fresh solution).
- 6.8 Allow the pieces and facepiece assembly to soak for 10 minutes.
- 6.9 After 10 minutes, remove the parts and rinse in warm water until the parts rinse



BROOKHAVEN NATIONAL LABORATORY Safety & Health Services Division INDUSTRIAL HYGIENE GROUP Standard Operating Procedure: Program Procedure	NUMBER IH72450
	REVISION FINAL Rev0
Subject: Cleaning Masks After Fit Testing	DATE 03/16/04
	PAGE 4 of 8

- runs clear.
- 6.10 Pour the used cleaning solution down the drain in Room 1-19 and rinse the bucket with tap water.
 - 6.11 Place the clean parts on a paper towel and let air dry (This typically done in the Fit Test room, Room 1-34). Hang the mask facepieces on the coat rack to dry.
 - 6.12 After parts and masks are dry, reassemble the respirator.
 - 6.13 Visually inspect the mask for distortion and inhalation and exhalation valves for proper seating.
 - 6.14 Place cleaned respirators into the plastic storage bag.
 - 6.15 Return them to the cabinet in Room 1-34.

7.0 IMPLEMENTATION & TRAINING

- 7.1 **Respirator Qualifications:** Only persons with current qualification can perform the role of equipment cleaner in this program. Qualification is obtained by reading this SOP.

8.0 REFERENCES

- 8.1 Georgia Steel "*Special Respirator Cleaner Plus®*" bottle label.
- 8.2 Cairns Face Piece Instruction label.
- 8.3 North 5400 and 7600 Series Full Face Air Purifying Respirator Operating and Maintenance Manual.
- 8.4 NIOSH *Suggested Respirator Cleaning and Sanitation Procedure* from CDC NIOSH Web Site.

9.0 ATTACHMENTS

- 9.1 Attachment 9.1: MSDS for Cleaning Solution
- 9.2 Attachment 9.2: Cairns Facepiece Label
- 9.3 Attachment 9.3: Qualification Documentation for Fit Test Respirator Cleaning

BROOKHAVEN NATIONAL LABORATORY Safety & Health Services Division INDUSTRIAL HYGIENE GROUP Standard Operating Procedure: Program Procedure		NUMBER IH72450
		REVISION FINAL Rev0
Subject: INSTRUMENT OPERATION RESPIRATORY PROTECTION PROGRAM Cleaning Masks After Fit Testing		DATE 03/16/04
		PAGE 5 of 8

10.0 DOCUMENTATION

Document Review Tracking Sheet		
Prepared By: <i>(signature/date on file)</i> R. Selvey 03/16/04 Certified Industrial Hygienist	Reviewed By / Date: <i>(signature/date on file)</i> D. Wadman 03/16/04 SHSD respirator Fit Tester Lead	Approved By / Date: <i>(signature/date on file)</i> R. Selvey 03/16/04 Industrial Hygienist Group Leader
Filing Code: IH52QR.	QA Review / Date:	Effective Date: 03/16/04

Periodic Review Record (3 year cycle)		
Date of Review	Reviewer Signature and Date	Comments Attached

The only official copy is on-line at the SHSD IH Group website.
Before using a printed copy, verify that it is current by checking the document issue date on the website.

BROOKHAVEN NATIONAL LABORATORY Safety & Health Services Division	NUMBER IH72450
	REVISION FINAL Rev0
Subject: INSTRUMENT OPERATION RESPIRATORY PROTECTION PROGRAM Cleaning Masks After Fit Testing	DATE 03/16/04
	PAGE 6 of 8

Attachment 9.1

MSDS for Cleaning Solution

MATERIAL SAFETY DATA SHEET						
Georgia Steel & Chemical Co., Inc. 10820 Guilford Rd Annapolis Junction, MD 20701			Product Information: (301) 317-5502 Emergency: (800) 424-9300 Document Number: MSDS100 Rev C Date Revised: 1/15/2001			
Section 1 – Identification						
Product Number: FK300, FK300C, FK300G, FK300GC						
Product Name: Special Respirator Cleaner Plus™						
Product Type: Quaternary ammonium germicidal detergent/disinfectant						
Hazard Rating						
Health: 2						
Fire: 0						
Reactivity: 0						
Personal Protective Equipment: B						
Scale: 4-Extreme 3-High 2-Moderate 1-Slight 0-Insignificant						
Section 2 – HAZARDOUS COMPONENTS						
Hazardous Materials (HAZMAT):						
Component	CAS #	% Weight	TWA	STEL	PEL	15-min. Ceiling
Allyl (C ₃ H ₅ , 50%; C ₃ H ₇ , 40%; C ₃ H ₉ , 10%) dimethyl benzyl ammonium chloride	68391-01-5	5-10	N/E	N/E	N/E	N/E
Octyl decyl dimethyl ammonium chloride	32826-11-2	1-5	N/E	N/E	N/E	N/E
Didecyl dimethyl ammonium chloride	7173-51-5	1-5	N/E	N/E	N/E	N/E
Dioctyl dimethyl ammonium chloride	5538-94-3	1-5	N/E	N/E	N/E	N/E
Active Ingredients: -						
Other Ingredients: -						
Section 3 – PHYSICAL / CHEMICAL CHARACTERISTICS						
Color:	Blue	Boiling Point:	212°F			
State:	Liquid	Melting Point:	N/A			
Odor:	Pleasant, sassafras odor	Solubility in Water:	Complete			
pH:	-	Percent Volatile:	-			
Vapor Density:	Same as water	Evaporation Rate:	1.0			
Specific Gravity (H ₂ O = 1):	1.010	Vapor Pressure (mmHg 20C):	Same as water			
*Exposure to sunlight may alter the color of this product but it does not have any adverse effect on the disinfectant properties of this product.						
Section 4 – FIRE AND EXPLOSION HAZARD DATA						
Flash Point:	None to boiling TCC					
Special Fire Fighting Procedures:	None					
Unusual Fire and Explosion Hazards:	None					
Flammable limits:	Lower Level: N/A	Upper Level: N/A				
Section 5 – REACTIVITY DATA						
Stability:	Stable					
Conditions to Avoid:	Do not mix with other cleaning chemicals.					
Materials to Avoid:	Strong oxidizing or reducing agents					
Hazardous Decomposition or Byproducts:	Ammonia, nitrogen oxides					
Hazardous Polymerization:	May not occur					

MATERIAL SAFETY DATA SHEET	
Section 6 – HEALTH HAZARD DATA	
Primary Route of exposure:	Ingestion, Skin, Eyes
Health Effects of overexposure:	Direct eye contact can cause severe irritation. Repeated skin contact can cause irritation. Inhalation of mists can cause irritation to mucous membranes. Ingestion may cause severe irritation to mouth, throat, gastrointestinal tract, as well as circulatory shock and respiratory depression. Dermatitis generally aggravated by exposure.
Signs or Symptoms of Overexposure (Acute):	Eyes: Redness, tearing. Skin: Irritation seen as redness. Ingestion: Burning pain in mouth, throat, abdomen, circulatory shock, and convulsions.
Signs or Symptoms of Overexposure (Chronic):	-
Carcinogenicity:	NTP: No IARC: No OSHA Reg: No
Section 7 – SPILL OR LEAK PROCEDURES	
Clean Up:	Mop up or absorb or use solid absorbent and shovel into containers for disposal.
Disposal:	Dispose in compliance with Federal, State, and Local laws and 40 CFR. Open dumping is prohibited. Do not reuse empty container and wash hands thoroughly after using product.
Handling and Storage:	Keep container closed when not in use. Keep away from food and water supplies.
Section 8 – CONTROL MEASURES	
Eye Protection:	Goggles
Skin Protection:	Rubber or neoprene gloves
Respiratory Protection:	N/A
Ventilation Procedures:	Mechanical (General) is Sufficient
Section 9 – EMERGENCY AND FIRST AID PROCEDURES	
Inhalation:	Unlikely to occur, however, in the event of inhalation move victim to fresh air. If irritation persists, or if symptoms of overexposure develop, get medical attention.
Skin Contact:	Wash with mild soap and water. Remove contaminated clothing and launder before reuse.
Eye Contact:	Flush with large amounts of water for 15 minutes lifting upper and lower lids occasionally. Get medical attention.
Ingestion:	DO NOT INDUCE VOMITING! Give promptly large quantities of egg whites or gelatin solution. If these are not available, drink large quantities of water. Avoid alcohol. Contact physician immediately.
Notes for Physician:	Probable mucus damage may contraindicate the use of gastric lavage.
Section 10 – ADDITION PRECAUTIONS	
DOT:	
KEEP OUT OF THE REACH OF CHILDREN.	
ABBREVIATIONS: ACGIH = American Conference of Government Industrial Hygienists ATA = International Air Transport Association ICAO = International Civil Aviation Organization OSHA = Occupational Safety and Health Administration PEL = Permissible Exposure Limit PPE = Personal Protective Equipment REV = Threshold Limit Value TWA = Time Weighted Average WHMIS = Workplace Hazardous Materials Information System N/A = Not Applicable N/E = Not Established	
The above information is believed to be correct with respect to the formula used to manufacture the product. As data, standards and regulations change, and conditions of use and handling are beyond our control, NO WARRANTY EXPRESSED OR IMPLIED IS GIVEN FOR THE CONTINUING ACCURACY OF THIS INFORMATION.	

BROOKHAVEN NATIONAL LABORATORY Safety & Health Services Division INDUSTRIAL HYGIENE GROUP Standard Operating Procedure: Program Procedure	NUMBER IH72450
	REVISION FINAL Rev0
Subject: INSTRUMENT OPERATION RESPIRATORY PROTECTION PROGRAM Cleaning Masks After Fit Testing	DATE 03/16/04
	PAGE 7 of 8

Attachment 9.2

Cairns Facepiece Label

FACEPIECE CLEANING, DRYING AND DISINFECTION

CLEANING INSTRUCTIONS

CAUTION: NEVER TOUCH INSIDE SIGHT SURFACE OF THE FACEPIECE WITH A CLOTH OR SPONGE. NEVER USE ABRASIVES OR ABRASIVE PADS.

- 1) Submerge the facepiece lens assembly in a solution of warm-hot (120°F±) water and mild detergent (CairnsAIR Cleaning/Disinfectant detergent, dish washing liquid.)
- 2) While submerged, vigorously scrub facepiece seal, outside lens, inside lens EXCEPT INSIDE SIGHT SURFACE with a cloth or sponge.
- 3) Rinse facepiece thoroughly with warm, then cool fresh water to remove detergent.
NOTE: DO NOT DISASSEMBLE EXHALATION VALVE FOR CLEANING.
- 4) Rinse exhalation valve thoroughly with a stream of cool fresh water from the tap.

DRYING INSTRUCTIONS

CAUTION: DO NOT TOUCH THE INSIDE SIGHT SURFACE WITH A CLOTH OR SPONGE.

- 5) Dry outside, seal and lower inside of lens and nose cup, with soft, clean, dry, lint free cloth.
- 6) Allow facepiece to air dry in open, well ventilated area.
DO NOT store facepiece in damp condition.



DISINFECTION

WARNING: DO NOT USE CHLORINE BLEACH ON FACEPIECE. DO NOT USE ALCOHOL ON INSIDE SIGHT SURFACE.

- 7) Mix CairnsAIR approved disinfectant chemicals with water as instructed on disinfectant package. (Call the factory.)
- 8) Dip entire facepiece in solution and soak thoroughly for at least five (5) minutes.
- 9) Rinse facepiece thoroughly with fresh, clean WARM, then cool water. Purge exhalation valve with tap water.
- 10) Dry facepiece as instructed.

REMOVE LABEL BEFORE USE

CAIRNS 

FIRE & SAFETY RESPIRATORY PROTECTION

11 Parkway Circle, Churchman's Center
New Castle, DE 19720
www.cairnsair.com

BROOKHAVEN NATIONAL LABORATORY Safety & Health Services Division INDUSTRIAL HYGIENE GROUP Standard Operating Procedure: Program Procedure	NUMBER IH72450
	REVISION FINAL Rev0
Subject: INSTRUMENT OPERATION RESPIRATORY PROTECTION PROGRAM Cleaning Masks After Fit Testing	DATE 03/16/04
	PAGE 8 of 8

Attachment 9.3

Qualification Documentation for **Fit Test Respirator Cleaning** **Qualification#: HP-IHP-72450**

Identification of person being qualified	(Name of employee and	BNL Life#)
Activities qualified to perform	Cleaning of facepieces used face fit testing.	
Basis used for certification (education, experience, indoctrination, and training)	Course: [School and Date] <i>Experience at BNL using SOP IH72450</i> Test results (where applicable): Not applicable	
Results of capability demonstration:	___ Observed performing the cleaning procedure accurately	
Results of physical examinations	Not required	
Signature of employer's designated approving representative	[Name of person performing the qualification, Title]	
Date of Certification	(date)	
Date of Expiration	(date) 36 months	